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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,984	01/30/2004	Ivaylov Popov	ALD-235	4539
24972	7590	03/18/2005	EXAMINER	
FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198			HOANG, TU BA	
			ART UNIT	PAPER NUMBER
			3742	
DATE MAILED: 03/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/768,984	<b>Applicant(s)</b> POPOV ET AL.	
	<b>Examiner</b> Tu Ba Hoang	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/25/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Specification**

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it should be limited to a single paragraph, therefore the phrase "(Single) Figure 1) appeared at the bottom of the page should be deleted. Correction is required. See MPEP § 608.01(b).

The title of the invention is too long and not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

**Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.

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(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: each part of the specification should be preceded by one of the corresponding headings set forth above to conform with U.S. practice. The entire page with reference number listing (i.e., the page after page number 7) should be deleted since such information has already been provided and described in the previous section of the specification. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In general, the claims are generally narrative and indefinite, failing to conform with current U.S. practice. The claims are also narrative in form and replete with indefinite and functional or operational language. The structure or step which goes to make up the device or process must be clearly and positively specified since it appeared that they fail to point out what is included or excluded by the claim language. The structure must be organized and correlated in such a manner as to present a complete operative device since it appeared that the claims are incomplete for omitting essential structural cooperative relationships between the structural recitations. See MPEP § 2172.01. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. For example:

Regarding claims 1 and 2, the phrase "for example" recited at line 2 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). It is noted that since a electroslag remelting unit (ESR) and a cold induction furnace are clearly two non equivalent units, each of them should be separately recited in a combination with the claimed equalizing device. It is unclear whether "the cooling water system" recited at line 2 is the same as "a cooling water system" recited at line 4 (for the induction furnace). Thus, in each of such "special melting unit" recited in claims 1 and 2, its melting chamber and cooling water system must be clearly defined and structural

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cooperative relationships between elements are needed since in claim 1, there are insufficient antecedent bases for "the pressures" recited at line 1, "the melting chamber" and "the cooling water chamber" recited at line 2, "the cooling water for the ingot mold/induction coil circuit" recited at lines 4-5, "the process gas" recited at line 5, "the two chambers" recited at line 9, "the two media" recited at line 10, "the countereffect" recited at lines 11-12, "the magnitude and rate" recited at line 12, and "the pressure drop/pressure rise" recited at lines 12-13 in the claim and in claim 2, there are also insufficient antecedent bases for "the pressure" recited at line 1, "the melting chamber and the cooling water system" recited at lines 1-2, "the cooling water circuit" recited at lines 5-6, "the copper ingot mold/induction coil" recited at line 6, "the above-referenced pipes" recited at line 15 (i.e., there are many of them), and "the design pressure" recited at lines 16-17 in the claim. Such "design pressure" must be clearly defined.

Additionally, in claim 2, the phrase "may be designed" (line 16) renders the claim indefinite because the claim includes elements not actually or positively cited, thereby rendering the scope of the claim unascertainable.

Claim 1 is also incomplete for omitting essential steps of such "a method for equalizing...", such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 1 provides for the use of pressure difference between a cooling water system and the pressure of the process gas in the melting chamber for equalizing the pressure therein by utilizing an intermediate hydraulic liquid vessel, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 1 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim 3 recites the limitations "the pipe between the vessel and the furnace hood" at line 2 and "the liquid-filled chamber" at lines 2-3. There are insufficient antecedent bases for these limitations in the claim or from the preceding claim 2.

In claims 4 and 5, there are insufficient antecedent bases for "the valves" and "the pipes" recited at line 4 in the claim or from the preceding claim.

It is also noted that claims 4 and 5 are exactly identical. One of them must be canceled or deleted.

Claim 2 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 3-4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter: It is noted that while the patent to Holzgruber et al (DE 37 21945) cited by the Applicant shows a device (Figure 2) for equalizing pressures between a melting chamber and a cooling water system of an electroslag remelting comprises a piston-type accumulator can be subdivided by a piston into two variable volume chambers with one of which can be connected via a pipe and control fittings or valves or pumps to a cooling water circuit including a heat exchanger. There is no indication that an intermediate vessel partially filled with hydraulic liquid (as recited in claims 1 and 2) is used to be connected to the melting chamber 40 in the manner as recited in claim 2.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Euler (US 3,995,687), Hochstrasser et al (US 4,301,320), and Feichtinger et al (US 6,790,254).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-fri from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu Ba Hoang  
Primary Examiner  
Art Unit 3742

March 10, 2005